PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Shogo HIROSE et al. Group Art Unit: 1797

Application No.: 10/667,339 Examiner: J. LEUNG

Filed: September 23, 2003 Docket No.: 117255

For: HONEYCOMB STRUCTURE, MANUFACTURING METHOD OF THE STRUCTURE, AND EXHAUST GAS PURIFICATION SYSTEM USING THE STRUCTURE

REQUEST FOR RECONSIDERATION WITH RCE

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In reply to the June 19, 2008 Office Action, and the October 9, 2008 Advisory Action, and in view of the attached Petition for Extension of Time and Request for Continued Examination, reconsideration of the rejection is respectfully requested in light of the following remarks.

This Request for Reconsideration is being filed concurrently with a Request to Suspend Examination. As discussed below, Applicants are supporting elements of their arguments with experimental data. Applicants are currently preparing a Declaration to verify the authenticity and veracity of this data. The Declaration will be filed shortly, and Applicants request that this Response be considered with this later filed Declaration.

Claims 1, 2 and 4-21 are pending in this application. Claims 13-15 stand withdrawn.

Claims 1, 2, 4, 10-12, and 16-21 are rejected under 35 U.S.C. §103(a) over U.S. Patent No. 5,853,459 to Kuwamoto et al. ("Kuwamoto") in view of U.S. Patent No. 5,566,545 to Hijikata et al. ("Hijikata") and further in view of U.S. Patent No. 4,464,185 to Tomita et al. ("Tomita"). Claims 5-8 are rejected under 35 U.S.C. §103(a) over Kuwamoto, Hijikata and Tomita and further in view of EP 1 128 031 to Hidaka et al. ("Hidaka"). Finally, claim 9 is rejected under 35 U.S.C. §103(a) over Kuwamoto, Hijikata and Tomita and further in view of U.S. Patent No. 6,248,689 to Manson. These rejections are respectfully traversed.

Independent claims 1 and 16 recite that the "width of each slit is in a range from 0.2 to 1 mm, and a length of each slit is from 1 mm to a length which is the shorter of (a)30 mm and (b) 1/2 of a length of the honeycomb structure." The Office Action asserts that Hijikata discloses the recited slits, but acknowledges that Hijikata does not disclose the recited dimensions for the slits.

I. Discussion of Previous Arguments and Advisory Action

The June 19 Office Action asserted that the dimensions of the slits are a "result effective variable" that could have been optimized through routine experimentation by one of ordinary skill in the art, based on the disclosures of Tomita. Applicant's September 19 Request for Reconsideration argued that, the dimensions of the slits are not result effective variables for three reasons. First, the variations of both the width and length of the slit constitutes two separate variables, which is contrary to the doctrine of a result effective variable. Second, Tomita does not disclose that the variations to the length of the slit achieve a recognized result. Third, the specification of Hijikata discloses the intended general dimensions of the alleged slits, and thus negates any presumption that one of ordinary skill in the art would have tried to optimize the dimensions of the alleged slits of Hijikata in a different manner.

The Advisory Action responds by asserting that both the length and width of the recited slits are independently each result effective variables. The Advisory Action asserts that Tomita discloses that the width of the slit can be optimized to maximize the filtration efficiency of the slit. The Advisory Action further asserts that the length of the slit can be optimized for mechanical strength, as disclosed in Hidaka. See page 3, lines 1-3 of Advisory Action.

II. Rebuttal of the Assertions of the Advisory Action

However, the dimensions of the slit are not a result effective variable because both the length and the width play a role in optimizing the filtration efficiency of the slit. MPEP 2144.05(II)(B) states that "a particular parameter must first be recognized as a result-effective variable, i.e. a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation" (emphasis added). As such, a result effective variable must be a single parameter, which can be easily optimized through routine experimentation.

In re Antonie, the seminal case in the field of result effective variables, held that variation of the allegedly result effective variable must "maximize [the property] regardless of the values of the other variables in the device." 559 F.2d 618, 619 (CCPA 1977) (emphasis added). Specifically, the court held that in a wastewater treatment device, the prior art failed to show that treatment capacity is directly dependent on tank volume (the alleged result effective variable) because the experimentation cited in the prior art failed to prove that treatment capacity was also not affected by the other potential variables such as throughput and contactor area. In other words, if multiple variables may independently affect a result, none of these variables can be considered a result effective variable.

Applicants have conducted significant experimentation related to the appropriate slit dimensions to maximize the slit's filtration efficiency. The collected data, shown in the

attached Table 1[1] shows that filtration efficiency of a slit varies with both the width and the length of a slit. For example, samples 2-5 and 8-10 that hold the slit length constant, show that filtration efficiency varies with slit width. Likewise, samples 5-7, which hold slit width constant, show that filtration efficiency also varies with slit length. As such, slit dimensions cannot be a result effective variable because both variables, independently, affect the result to be optimized. Therefore, the slit dimensions cannot constitute a single variable, which can be optimized as required for a result effective variable.

Furthermore, the data shows that a slit in which either the length or width is outside the recited ranges will have poor filtration efficiency even if the other value is allegedly optimized. This shows that it is improper to independently analyze slit width and length, they must be addressed together.

Finally, neither Tomita nor Hijikata disclose or suggest that filtration efficiency will vary with slit length. As such, the Office Actions have not demonstrated that the prior art shows that slit length is known to affect filtration efficiency. As such, even if slit length were to be analyzed independently of slit width, it would still not qualify as a result effective variable.

For at least the above reasons, the dimensions of the slits are not a result effective variable, as asserted by the Office Action. Thus, it would not have been obvious to optimize the dimensions of the slit under the result effective variable doctrine. Thus, one of ordinary skill in the art would not have thought it obvious to try and optimize the channels of Hijikata to the recited dimensions of the claims.

Therefore, the applied references fail to disclose or suggest that the width of each slit is in a range from 0.2 to 1 mm, and a length of each slit is from 1 mm to a length which is the

[1] Applicants will shortly be filing a Declaration documenting the methods and details of the experiments giving rise to the enclosed data in Table 1.

shorter of (a)30 mm and (b) 1/2 of a length of the honeycomb structure, as recited in claims 1 and 16. Thus, withdrawal of the rejection of claims 1 and 16, and claims 2, 4-15, and 17-21 depending therefrom, is respectfully requested.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1, 2 and 4-21 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,

James A. Oliff
Registration No. 27,075

Moshe K. Wilensky
Registration No. 56,263

JAO:MKW/jls

Attachments:
Petition for Extension of Time
Request for Continued Examination
Table 1

Date: November 19, 2008

OLIFF & BERRIDGE, PLC
P.O. Box 320850
Alexandria, Virginia 22320-4850
Telephone: (703) 836-6400

DEPOSIT ACCOUNT USE AUTHORIZATION
Please grant any extension necessary for entry;
Charge any fee due to our Deposit Account No. 15-0461

Table 1

Sample	Slit Width	Slit Length	@0g		@7.5g	
			Pressure Drop	Filtration Efficiency	Pressure Drop	Filtration Efficiency
	mm	mm	kPa	%	kPa	%
1	0	0	1.4	80	7.0	98
2	0.1	30	1.41	70	5.2	95
3	0.2	30	1.4	70	5.2	96
4	0.3	30	1.35	73	5.4	97
5	0.5	30	1.3	71	5.5	96
6	0.5	60	1.2	34	5.3	71
7	0.5	84	0.8	22	3.9	60
8	0.7	30	1.0	42	5.0	82
9	1	30	1.1	43	5.0	80
10	1.2	30	1.0	30	4.4	70
11	1.2	35	0.9	24	3.9	60